

UNCLASSIFIED

FY 2002 RDT&E,N Budget Item Justification Sheet

DATE: JUNE 2001

BUDGET ACTIVITY: 4

PROGRAM ELEMENT: 0604707N

PROGRAM ELEMENT TITLE: SEW Architecture/Eng Support

(U) COST: (Dollars in Thousands)

PROJECT

NUMBER & TITLE	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE
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X0798 OTH Targeting	1,435	2,089	2,112
X2144 SEW Engineering*	8,142	12,043	8,469
R2357 Maritime Battle Center	22,295	23,618	21,678
R2630 Adv Comm Info Tech	2,903	0	0
TOTAL	34,775	37,750	32,259

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This Program Element (PE) contains three projects: Over-the-Horizon Targeting (OTH-T), Space and Electronic Warfare (SEW) Engineering, and Maritime Battle Center (MBC). The projects are systems engineering non-acquisition programs with the objectives of developing, testing, and validating Naval Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) architectures to support naval missions in Joint and Coalition Theater. The mission of this program element is carried out by multiple tasks that are used to ensure Naval C4ISR Command and Control Warfare (C2W) components of SEW are effectively integrated into the C4ISR architectures. Additionally the program ensures that (1) the composite operational capabilities of SEW systems (not the individual component systems) conform to the Naval C4ISR architecture as related to the objectives of National Defense Strategy and evolving joint visions and direction, such as Joint Vision 2010 (JV 2010), "Copernicus...C4ISR for the 21st Century," "Forward...From the Sea," C4I For the Warrior, and the Defense Science Board Summer Study Task Force on Information Architecture for the Battlefield and are guided by CINC requirements; and (2) that SEW systems and systems integration effort involves leading-edge

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technology transfer of information processing technologies primarily through integration of government and commercial off-the-shelf (GOTS/COTS) products to enhance the Navy's operational capability, interoperability, flexible reconfiguration, as well as reduce costs. The MBC is a distributed organization focusing on concept development, experimentation and analysis tasks are coordinated by the Naval War College, and the Navy Warfare Development Command, with C4ISR technical and acquisition support coordinated by the Space and Naval Warfare Systems Command in FY99. Effective fiscal year 2000, MBC changes claimancies from Space and Naval Warfare Systems Command to Office of Naval Research. The MBC will also act as the Navy representative to the Joint Battle Center and the Battle Labs of other services.

JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under DEMONSTRATION & VALIDATION because it develops and integrates hardware for experimental tests related to specific ship or aircraft applications. It also develops a virtual demonstration and validation environment across Navy for C4ISR.

B. (U) PROGRAM CHANGE FOR TOTAL P.E.:

	<u>FY2000</u>	<u>FY2001</u>	<u>FY2002</u>
(U) FY2001 President's Budget	36,904	34,100	32,507
Execution Adjustment	-872		
Program Adjustment			-248
Inflation Adjustment			
Congressional Rescission	-150	-350	
Congressional Plus-Up		+4,000	
NWCF Adjustment			
SBIR	-1,107		
FY2002 President's Budget Submission	34,775	37,750	32,259

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PROGRAM ELEMENT TITLE: SEW Architecture/Eng

(U) COST: (Dollars in Thousands)

NUMBER	FY 2000	FY 2001	FY 2002
TITLE	ACTUAL	ESTIMATE	ESTIMATE
X0798 OTH Targeting	1,435	2,089	2,112

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Over-the-Horizon Targeting (OTH-T) program provides a virtual, global systems integration and test facility for Information Technology for the 21st Century (IT-21) C4ISR technology that supports the collection, transmission, correlation, and display of track data into a Common Operational Picture (COP) in support of warfighting requirements. This effort was originally undertaken to support targeting of over the horizon weapons such as the TOMAHAWK cruise missile. The common view of the battle space that was provided to the warfighter by OTH-T has been applied across the spectrum of warfare missions; however, the technology and doctrine on which it was based has changed radically in recent years. The result is that the first goal of the OTH-T program is to transition the OTH architectures and systems from older Military Standard (MIL-STD) technologies to COTS (Commercial Off the Shelf) and GOTS (Government Off the Shelf) based technologies that support Network Centric Warfare and the Navy's plan to support JV 2010 implementing IT-21 technology. The second goal of the OTH-T program is to support integration and interoperability of all C4I systems into warfighting capabilities which includes Year 2000 (Y2K) integration and testing. This support includes providing technical expertise afloat and ashore via a cadre of highly-trained Fleet Systems Engineers who ensure smooth integration of new capabilities to enhance OTH-T during major Fleet exercises and demonstrations which are used to validate and evaluate developed portions of configuration. The OTH-T program integration and testing in support of warfighting capabilities included Y2K interoperability testing for both MIL-STD and IT-21 COTS equipment for submarines, surface, and land based components. Allied interoperability is an important issue for future naval operations, especially with the Navy initiative to expand Internet Protocol (IP) networking throughout the Fleet (IT-21 and Naval Intranet). Specific solutions do not exist to solve the IP connectivity issue with Allies. Funding will allow development of solutions for emerging Allied interoperability requirements. Data throughput will need to be increased for the exchange of larger sized files within the limitations of the high frequency (HF) medium in support of, for example, Collaboration at Sea (CAS). Funding will allow for further

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development of potential solutions for merging improved transmission control protocol/internet protocol (TCP/IP) capability with advance digital network systems (ADNS) and existing international standards (e.g.: STANAG 5066). Funding will also allow for development of subnet relay protocols which will provide for a significant improvement within and between battlegroups.

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PROJECT NUMBER: X0798

PROGRAM ELEMENT TITLE: SEW Architecture/Eng

PROJECT TITLE: OTH TARGETING

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 2000 ACCOMPLISHMENTS:

- (U) (\$137) Based on results of integration testing, developed capability functional description documents which are used by the programs of record to define system functional requirements that support these capabilities. Developed system interface standards where required. Provided a valid master configuration database in support of the new IT-21 Battle Group configurations.
- (U) (\$284) Conducted systems integration, interoperability, and Y2K testing using the facilities of the Land Based Test Network (LBTN) and Systems Integration Environment. (Reconfigurable Land Based Test Sites (RLBTS) have been expanded to validate IT-21 technologies prior to shipboard installation.)
- (U) (\$443) Validated and verified the interoperability of architectures for new capabilities and supporting systems to the fleet. Worked with the fleet staffs and Naval Doctrine Command to develop policy and doctrine for operations of Naval Internet (NI) in support of Network Centric Warfare ideology. Served as technical expert in researching the fleet's technical questions and providing information.
- (U) (\$377) Ensured joint interoperability of all systems on the NI by enforcing compliance with the Joint Technical Architecture and Y2K. Verified relevance, recommended modifications to, and maintained OTH-T specifications for support of distribution of the COP to maritime forces. The program's systems engineers made input into the SPAWAR advanced technology division to insure critical deficiencies are high priority during investigation of IT-21. Provided connectivity and conducted integration and interoperability testing to verify Y2K compliance and provided systems engineering expertise for both IT-21 and MIL-STD technologies.
- (U) (\$194) Conducted integration testing of OTH-T and combat systems.

2. (U) FY 2001 PLAN

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PROJECT TITLE: OTH TARGETING

- (U) (\$247) Integrate code combination techniques developed during FY00 into internationally agreed HF data profiles for significant improvement in guarantee of delivery of email attachments in poor propagation conditions associated with the HF medium.
- (U) (\$267) Exploit and coordinate subnet relay protocols and multi-frequency band channels to provide greater data throughput in the HF and ultra high frequency (UHF) Line-of-Site radio frequency (RF) mediums.
- (U) (\$152) Based on results of integration testing, develop capability functional description documents which will be used by the programs of record to define system functional requirements that support these capabilities. Develop system interface standards where required. Provided a valid master configuration database in support of the new IT-21 Battle Group configurations.
- (U) (\$311) Conduct systems integration and interoperability using the facilities of the Land Based Test Network (LBTN) and Systems Integration Environment (SIE). (Reconfigurable Land Based Test Sites (RLBTS) have been expanded to validate IT-21 technologies prior to shipboard installation.)
- (U) (\$488) Validate and verify the interoperability of architectures for new capabilities and supporting systems to the fleet. Work with the fleet staffs and Naval Doctrine Command to develop policy and doctrine for operations of NVI in support of Network Centric Warfare ideology. Serve as technical expert in researching the fleet's technical questions and providing information.
- (U) (\$412) Ensure joint interoperability of all systems on the NI by enforcing compliance with the Joint Technical Architecture. Verify relevance, recommend modifications to, and maintain OTH-T specifications for support of distribution of the COP to maritime forces. The program's systems engineers will make input into the SPAWAR advanced technology division to insure critical deficiencies are high priority during investigation of IT-21. Provide connectivity and conduct integration and interoperability testing and provide systems engineering expertise for both IT-21 and MIL-STD technologies.
- (U) (\$213) Conduct integration testing of OTH-T and combat systems in accordance with OPNAVINST 9410.5.

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PROJECT TITLE: OTH TARGETING

3. (U) FY 2002 PLAN

- (U) (\$245) Integrate code combination techniques developed during FY01 into internationally agreed HF data profiles for significant improvement in guarantee of delivery of email attachments in poor propagation conditions associated with the HF medium. Exploit HF Full Duplex protocols and adaptive compression techniques to greatly improve data throughout.
- (U) (\$275) Exploit and coordinate subnet relay protocols and multi-frequency band channels to provide greater data throughput in the HF and UHF Line of Site RF mediums. Exploit HF Beyond-Line-of-Site and Extended-Line-of-Sight ground - and sky - waveforms to improve long range tactical communications. Adapt IP Quality of Service (QOS), Voice over IP (VoIP) and IP VTC (H.323) protocols to subnet relay communications.
- (U) (\$152) Based on results of integration testing, develop capability functional description documents which will be used by the programs of record to define system functional requirements that support these capabilities. Develop system interface standards where required. Provided a valid master configuration database in support of the new IT-21 Battle Group configurations.
- (U) (\$308) Conduct systems integration and interoperability using the facilities of the Land Based Test Network (LBTN) and Systems Integration Environment. (Reconfigurable Land Based Test Sites (RLBTS) have been expanded to validate IT-21 technologies prior to shipboard installation.)
- (U) (\$482) Validate and verify the interoperability of architectures for new capabilities and supporting systems to the fleet. Work with the fleet staffs and Naval Doctrine Command to develop policy and doctrine for operations of NVI in support of Network Centric Warfare ideology. Serve as technical expert in researching the fleet's technical questions and providing information.
- (U) (\$405) Ensure joint interoperability of all systems on the NI by enforcing compliance with the Joint Technical Architecture. Verify relevance, recommend modifications to, and maintain OTH-T specifications for

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PROGRAM ELEMENT TITLE: SEW Architecture/Eng

PROJECT TITLE: OTH TARGETING

support of distribution of the COP to maritime forces. The program's systems engineers will make input into the SPAWAR advanced technology division to insure critical deficiencies are high priority during investigation of IT-21. Provide connectivity and conduct integration and interoperability testing and provide systems engineering expertise for both IT-21 and MIL-STD technologies.

- (U) (\$245) Conduct integration testing and certification, in accordance with OPNAVINST 9410.5, of OTH-T and combat systems with tactical data exchanged over CST (Common operational picture (COP) Synchronization Tools) networks and other networks. These CST networks will operate within battle groups and to ashore nodes while other networks will continue to use BGDBM (Battle Group DataBase Management). Integration testing to include testing of GCCS-M and CDS (Combat Decision Systems) two-way interfaces. Testing to also address issues of Time Critical Strike with for example TTWCS (Tomahawk Weapons Control System).

B. (U) OTHER PROGRAM FUNDING SUMMARY:

(U) PE 0204660N, AGSAG 4B7N	FY 2000	FY 2001	FY 2002
	572	418	448
(U) PE 0303113N, AGSAG 4A6M	1,242	660	882

(U) RELATED RDT&E: (SEW) Architecture/Engineering Support program element is related to all Naval C4I related efforts.

C. (U) ACQUISITION STRATEGY: Not applicable.

D. (U) SCHEDULE PROFILE: Not applicable.

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FY 2002 RDT&E,N Program Element/Project Cost Breakdown

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PROJECT NUMBER: X0798

PROGRAM ELEMENT TITLE: SEW Architecture/Eng

PROJECT TITLE: OTH TARGETING

Exhibit R-3 Cost Analysis (page 2)										Date		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/4				PROGRAM ELEMENT 0604707N						PROJECT NAME AND NUMBER OTH Targeting X0798		
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY-01 Cost	FY-01 Award Date	FY-02 Cost	FY-02 Award Date			Cost To Complete	Total Cost	Target Value of Contract
Program Management	Various	Various	1468							Cont.	Cont.	Cont.
System Test and Evaluation	Various	Various	3648							Cont.	Cont.	Cont.
Systems Engineering	Various	Various	1076	514	TBD	520	TBD			Cont.	Cont.	Cont.
Interoperability Requirements	Various	Various	3266							Cont.	Cont.	Cont.
T & E Tools Development	Various	Various	137	152	TBD	152	TBD					
Systems Integration & Interoperability Testing (LBTN & SIE)	Various	Various	284	311	TBD	308	TBD					
Interoperability Validation	Various	Various	443	487	TBD	482	TBD					
Joint Interoperability	Various	Various	377	412	TBD	405	TBD					
Testing OTH-T Systems	Various	Various	194	213	TBD	245	TBD					
Subtotal T&E			10893	2089		2112				Cont.	Cont.	Cont.
Remarks												

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PE/Project Cost Breakdown
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Subtotal Management												
Remarks												
Total Cost			10893	2089		2112				Cont.	Cont.	Cont.

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PE/Project Cost Breakdown
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PROGRAM ELEMENT: 0604707N

PROJECT NUMBER: X2144

PROGRAM ELEMENT TITLE: SEW Architecture/Eng

PROJECT TITLE: SEW ENGINEERING

(U) COST: (Dollars in Thousands)

NUMBER	FY 2000	FY 2001	FY 2002
TITLE	ACTUAL	ESTIMATE	ESTIMATE
X2144 SEW Engineering	8,142	12,043	8,469

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Space and Electronic Warfare (SEW) Engineering is a non-acquisition engineering effort defined as the neutralization or destruction of enemy targets and the enhancement of friendly force battle management through integrated employment and exploitation of the electromagnetic spectrum and the medium of space. SEW Engineering encompasses efforts to ensure that 1) the composite operational capabilities of SEW systems (not the individual component systems) conform to the Naval C4ISR architecture as related to the National Defense Strategy and evolving joint visions and direction such as Joint Vision 2020, Joint Vision 2010, "Copernicus...C4ISR for the 21st Century," "Forward...From the Sea," C4I for the Warrior, and the Defense Science Board Summer Study Task Force Report on Information Architecture for the Battlefield, and are guided by CINC requirements; 2) the systems support emerging fleet requirements as documented and necessitated through concepts of Network Centric Warfare; and 3) the SEW systems and systems integration effort involves leading edge technology transfer of information processing technologies primarily through integration of government and commercial off-the-shelf (GOTS/COTS) products to enhance the Navy's operational capability, interoperability, flexible reconfiguration, as well as reduce costs. SEW Engineering also provides the Navy support in the demonstration and integration of C4I systems developed by the services and by commercial vendors as part of the annual Joint Warrior Interoperability Demonstration (JWID) sponsored by the Joint Chiefs of Staff as directed by CJCSI 6260.1. Each JWID is designed to identify joint interoperability deficiencies, and to solicit solutions to these deficiencies from commercial industry and military RDT&E agencies. JWID demonstrates these technologies and architecture improvements, conducts an assessment by the joint warfighters and considers mature, low cost, systems/applications for rapid acquisition. Service

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PROGRAM ELEMENT: 0604707N

PROJECT NUMBER: X2144

PROGRAM ELEMENT TITLE: SEW Architecture/Eng

PROJECT TITLE: SEW ENGINEERING

participants benefit from the exposure and training on new and existing new technologies, infrastructure improvements left behind from the demonstration, knowledge gained on joint and combined operations, and the assessment, selection, and acquisition of mature solutions to existing deficiencies.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 2000 ACCOMPLISHMENTS:

- (U) (\$2,565) IAW CJCSI 6260.01, developed plans for the integration of maturing system developments, military and commercial technologies that support enhanced operational capabilities in key Commander in Chief priority areas and Joint Mission Area (JMA) Assessment Thrust Areas with a combined force structure into the annual Joint Warrior Interoperability Demonstration (JWID). Integration plans included high-capacity communications, improved Command and Control Warfare (C2W), integrated land fight architecture, trusted systems/multi-level security, improved sensors/strike planning, common operational picture, collaborative planning, knowledge based systems, smart push-warrior pull data flow, theater air defense/force protection, combat identification, and multi-national task force architecture at sea. In conjunction with all services, assessed mature technologies and submitted recommendation for rapid acquisition of technologies that provide solutions to the warfighter's interoperability problems.
- (U) (\$1,066) Continued Migration of the Overarching C4ISR Operational Requirements Documentation to a web-based, fully interactive, collaborative site, where requirements generators, systems developers, and other users requiring such data, could gain access to automated databases and accompanying tools. Produced the Strike thread for Operational Architecture. Continued support to the C4ISR portion of the Joint Technical Architecture/Standards development/documentation and implementation effort, and published periodic updates. Represented and coordinated Navy inputs into the Joint Technical Architecture developed in conjunction with both internal Naval and external service units and agencies including the ASD(C3I) Joint Technical Architecture (JTA) Development Group (JTADG). Navy inputs to the C4ISR portion of the JTA Version 3.0 were developed in accordance with direction from the Technical Architecture

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Steering Group (TASG) and the DoD Architecture Coordination Council (ACC). Coordinated the C4ISR JTA standards and protocols with the DON CIO's Information Technology Standards Guidance (ITSG) document. Coordinated the implementation of JTA standards and protocols throughout the C4ISR systems development community. Provided appropriate design guidance and resulting data inputs into the Naval Architecture Database (NAD). Supported the maturation of the Levels of Information Systems Interoperability (LISI) constructs as they relate to the JTA.

- (U) (\$893) Enhanced and refined the C4ISR Planned Systems Design for the Program Objectives Memorandum years. Continued to develop and validate a Naval C4ISR systems design environment to support Naval missions in a Joint and Coalition Theater. Architectural development consisted of (1) assisting OPNAV, Navy Doctrine Command, and Fleet Commanders in the development of battlegroup-wide and hull specific designs, (2) maintaining documentation describing the Systems Architectures/shipboard and ashore configurations, and (3) providing system architecture parameters, attributes, and characteristics necessary to ensure that Program Executives and Managers acquire systems that achieve the desired operational objectives. Participated with the Joint Battle Center and Naval Battle Laboratories to verify and validate overall systems designs and detailed implementation designs. The decomposition of the overarching POM C4ISR Systems Architecture was accomplished. SPAWAR developed the functional design documents for Battle Groups/Amphibious Ready Groups, generic platform designs, and detailed designs for each platform. These developed documents, coupled with control measures, allowed configuration management of installed designs. Sponsored and participated in related IPTs within the claimancy and throughout the Navy Department and DoD, and participated in OSD and joint architectural working groups and panels. Defined an end-to-end process model to document the C4ISR systems development process and relationships among the systems development components.
- (U) (\$615) Augmented/updated/maintained the Overarching C4ISR Operational Requirements documentation. The composite operational capabilities of C4ISR systems were designed so that they conform to the Naval C4ISR architecture as it relates to the National Defense Strategy and evolving joint visions and

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direction such as Joint Vision 2010, "Copernicus...C4ISR for the 21st Century," "Forward...From the Sea", C4I for the Warrior, and the Defense Science Board Summer Study Task Force Report on Information Architecture for the Battlefield, and are guided by CINC requirements. As part of the augmentation of the Operational Requirements documentation initial development of a technical insertion roadmap was developed with links into architecture and requirements. In order to track changes Platform Operational Requirements Documents were traced to UJTL and Naval Tactical Tasks for LPD17, LHD1, NSSN, and CVN77. This requirements traceability was produced in a database for better utilization. Additionally, an initial draft for C4ISR battlegroup support plan was prepared.

- (U) (\$2,556) Developed the Navy's common repository for architectural and interoperability support, data integration, and systems design data and information. As part of the repository, the Naval Architecture Database (NAD) encompassed the establishment and population of the dynamic systems model, analysis of the criteria and requirements for the operational system architecture functional transition, continuation of the population of the data models, update of the Hierarchical Data Dictionary.
- (U) (\$447) Generated a web-based collaborative grid approach where programs/projects are synchronized across the claimancy/acquisition community. The draft product, based on web technology, allowed a matrix of capabilities to be mapped to organizations and products, leading to prioritized and scoped C4ISR work elements for claimancy pursuits.

2. (U) FY 2001 PLAN:

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PROJECT TITLE: SEW ENGINEERING

- (U) (\$2,670) IAW CJCSI 6260.01, develop plans for the integration of maturing system developments, military and commercial technologies that support enhanced operational capabilities in key CINC priority areas, Joint Mission Area (JMA) Assessment Thrust Areas, and combined operations into the annual Joint Warrior Interoperability Demonstration (JWID). Integration plans will include high-capacity communications, improved Command and Control Warfare (C2W), integrated land fight architecture, trusted systems/multi-level security, improved sensors/strike planning, common operational picture, collaborative planning, knowledge based systems, smart push-warrior pull data flow, theater air defense/force protection, and combat identification. Field demonstrated and assessed Joint Chief of Staff mandated Golden Nuggets Technologies that will benefit operational forces with their immediate employment at sea or in the field.
- (U) (\$1,478) Implement a C4ISR-T Systems Design effort that is comprised of Battlegroup engineering design activities for Battlegroup deployment and new ship construction, integration of C4ISR systems throughout the Battlegroup, systems interfacing, and high level design across Battlegroup activities (Configuration Management, integration with training, logistics, spares, safety and EMI). Design activities include tactical shore systems, relationships of C4ISR systems to NMCI, and pier-side design and integration across the shore sites and the Fleet.
- (U) (\$949) Continue the migration of the Overarching C4ISR Operational Requirements Documentation to a web-based, fully interactive, collaborative site, where requirements generators, systems developers, and other users requiring such data, can gain access to automated databases and accompanying tools. Continue support to the C4ISR portion of the Joint Technical Architecture/Standards development/documentation and implementation effort, and publish periodic updates. Represent and coordinate Navy inputs into the Joint Technical Architecture developed in conjunction with both internal Naval and external service units and agencies including the ASD(C3I) Joint Technical Architecture (JTA) Development Group (JTADG). Navy inputs to the C4ISR portion of the JTA Version 3.0 will be developed in accordance with direction from the Technical Architecture Steering Group (TASG) and the DoD Architecture Coordination Council (ACC).
- (U) (\$776) Develop concept and evaluation alternatives to be explored as part of the CNO N6 Advanced Command & Control Wargame (AC2WG) series. Provide technical guidance and roadmaps that link AC2WG

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PROJECT TITLE: SEW ENGINEERING

concepts and Fleet Battle Experiments (FBE's) to evolving Naval C4ISR programs. Translate concepts and guidance into technical design requirements.

- (U) (\$892) Enhance and refine the C4ISR Planned Systems Design for the POM years. Continue to develop and validate a Naval C4ISR systems design environment to support Naval missions in a Joint and Coalition Theater. Architectural development will consist of (1) assisting OPNAV, Navy Doctrine Command, and Fleet Commanders in the development of battlegroup-wide and hull specific designs, (2) maintaining documentation describing the Systems Architectures/shipboard and ashore configurations; and (3) providing system architecture parameters, attributes, and characteristics necessary to ensure that Program Executives and Managers acquire systems that achieve the desired operational objectives. Participate with the Joint Battle Center and Naval Battle Laboratories to verify and validate overall systems designs and detailed implementation designs. The decomposition of the overarching POM C4ISR Systems Architecture will be accomplished. This involves breaking down the specifics of warfighter functions to lower levels of detail. From this, SPAWAR can develop the functional design documents for Battle Groups/Amphibious Ready Groups, generic platform designs, and detailed designs for each platform. These developed documents, coupled with control measures, will allow configuration management of installed designs. Sponsor and/or participate in related IPTs within the claimancy and throughout the Navy Department and DoD, as required and participate in OSD and joint architectural working groups and panels. Define an end-to-end process model to document the C4ISR systems development process and relationships among the systems development components. Finally, the generation and analysis of a goal C4ISR integrated architecture that provides operational, system, and technical views for a notional Battle Group/Amphibious Ready Group in the future. The integrated architecture will follow the guidance of applicable DoD and DoN policies i.e. Operational, Systems and Technical Architectures as defined in the OSD DoD C4ISR Architecture Framework, Joint Technical Architecture, and Information Technology Standard Guidance. The goal architecture denotes integrated naval C4ISR system functionality that will help to guide future C4ISR system integration and interoperability. The Operational Architecture integrated architecture captures operational nodes, warfighter activities, system functions, interoperability standards, information exchange requirements (IERS), and performance attributes associated with the IERS.

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FY 2002 RDT&E,N Budget Item Justification

DATE: JUNE 2001

BUDGET ACTIVITY: 4

PROGRAM ELEMENT: 0604707N

PROJECT NUMBER: X2144

PROGRAM ELEMENT TITLE: SEW Architecture/Eng

PROJECT TITLE: SEW ENGINEERING

- (U) (\$707) Augment/update/maintain the Overarching C4ISR Operational Requirements documentation. The composite operational capabilities of C4ISR systems must be designed so that they conform to the Naval C4ISR architecture as it relates to the National Defense Strategy and evolving joint visions and direction, such as Joint Vision 2020, Joint Vision 2010, "Copernicus...C4ISR for the 21st Century," "Forward...From the Sea", C4I for the Warrior and are guided by CINC requirements. As operational requirements change, either through changes in mission, technological change, technical insertion into systems, or through systems integration efforts, these changes must be reflected in all applicable requirements documents. Additionally, support to related C4ISR projects as they define and maintain Theater and Battleforce C4ISR architectures must be maintained. Also, integrate future Naval C4ISR capabilities within migration plans and roadmaps linked to operational requirements documentation. Finally, assist OPNAV in REQ/BAM support for the development of warfighter C4ISR requirements. These requirements are defined by both OPNAV and the Fleet. The products include the support for requisite Baseline Assessment Memoranda, Copernicus Requirements Working Group statements of Fleet requirements, the generation of a SMIDB or like requirements functional traceability matrix from the Fleet based on requirements documents (ORDs, MNS, etc.) and IWARS inputs.
- (\$571) Continue development of the web-based collaborative grid approach where programs/projects are synchronized across the claimancy/acquisition community. The shift for the afloat part of the Navy, from platform-centric warfare to network-centric warfare, and the Naval Intranet for the land-based portion of the Navy, demands that new approaches are identified, matured, and tested with the warfighters and systems developers. The product will be a validated and modeled methodology, based on web technology, whereby a matrix of capabilities are mapped to organizations and products, leading to prioritized and scoped C4ISR work elements for claimancy pursuits. This web site will contain the results of technology insertion experiments and "lessons learned" from those trials, so that successes can be applied to similar systems enhancement attempts. Included will be software reuse experiments, hardware applications, and networking trials.

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PROGRAM ELEMENT: 0604707N

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PROGRAM ELEMENT TITLE: SEW Architecture/Eng

PROJECT TITLE: SEW ENGINEERING

3. (U) FY 2002 PLAN:

- (U) (\$2,666) IAW CJCSI 6260.01, Develop plans for the integration of maturing system developments, military and commercial technologies that support enhanced operational capabilities in key CINC priority areas and Joint Mission Area (JMA) Assessment Thrust Areas with a combined force structure into the annual Joint Warrior Interoperability Demonstration (JWID). Integration plans will include high-capacity communications, improved Command and Control Warfare (C2W), integrated land fight architecture, trusted systems/multi-level security, improved sensors/strike planning, common operational picture, collaborative planning, knowledge based systems, smart push-warrior pull data flow, theater air defense/force protection, combat identification, and multi-national task force architecture at sea. In conjunction with all services, assess mature technologies and submit recommendation for rapid acquisition of technologies that provide solutions to the warfighter's interoperability problems.
- (U) (\$772) NMCI reimbursable funding.
- (U) (\$416) Implement a C4ISR-T Systems Design effort that is comprised of Battlegroup engineering design activities for Battlegroup deployment and new ship construction, integration of C4ISR systems throughout the Battlegroup, systems interfacing, and high level design across Battlegroup activities (Configuration Management, integration with training, logistics, spares, safety and EMI).
- (U) (\$395) Develop concept and evaluation alternatives to be explored as part of the CNO N6 Advanced Command & Control Wargame (AC2WG) series. Provide technical guidance and roadmaps that link AC2WG concepts and Fleet Battle Experiments (FBE's) to evolving Naval C4ISR programs. Translate concepts and guidance into technical design requirements.

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DATE: JUNE 2001

BUDGET ACTIVITY: 4

PROGRAM ELEMENT: 0604707N

PROJECT NUMBER: X2144

PROGRAM ELEMENT TITLE: SEW Architecture/Eng

PROJECT TITLE: SEW ENGINEERING

- (U) (\$1,168) Enhance and refine the C4ISR Planned Systems Design for the POM years. Continue to develop and validate a Naval C4ISR systems design environment to support Naval missions in a Joint and Coalition Theater. Architectural development will consist of (1) assisting OPNAV, Navy Doctrine Command, and Fleet Commanders in the development of battlegroup-wide and hull specific designs, (2) maintaining documentation describing the Systems Architectures/shipboard and ashore configurations; and (3) providing system architecture parameters, attributes, and characteristics necessary to ensure that Program Executives and Managers acquire systems that achieve the desired operational objectives. Participate with the Joint Battle Center and Naval Battle Laboratories to verify and validate overall systems designs and detailed implementation designs. The decomposition of the overarching POM C4ISR Systems Architecture will be accomplished. This involves breaking down the specifics of warfighter functions to lower levels of detail. From this, SPAWAR can develop the functional design documents for Battle Groups/Amphibious Ready Groups, generic platform designs, and detailed designs for each platform. These developed documents, coupled with control measures, will allow configuration management of installed designs. Sponsor and/or participate in related IPTs within the claimancy and throughout the Navy Department and DoD, as required and participate in OSD and joint architectural working groups and panels. Define an end-to-end process model to document the C4ISR systems development process and relationships among the systems development components. Finally, the generation and analysis of a goal C4ISR integrated architecture that provides operational, system, and technical views for a notional Battle Group/Amphibious Ready Group in the future. The integrated architecture will follow the guidance of applicable DoD and DoN policies i.e. Operational, Systems and Technical Architectures as defined in the OSD DoD C4ISR Architecture Framework, Joint Technical Architecture, and Information Technology Standard Guidance. The goal architecture denotes integrated naval C4ISR system functionality that will help to guide future C4ISR system integration and interoperability. The Operational Architecture integrated architecture captures operational nodes, warfighter activities system functions, interoperability standards, information exchange requirements (IERS), and performance attributes associated with the IERS.
- (U) (\$525) Augment/update/maintain the Overarching C4ISR Operational Requirements documentation. The composite operational capabilities of C4ISR systems must be designed so that they conform to the Naval

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Budget Item Justification
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FY 2002 RDT&E,N Budget Item Justification

DATE: JUNE 2001

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PROGRAM ELEMENT: 0604707N

PROJECT NUMBER: X2144

PROGRAM ELEMENT TITLE: SEW Architecture/Eng

PROJECT TITLE: SEW ENGINEERING

C4ISR architecture as it relates to the National Defense Strategy and evolving joint visions and direction, such as Joint Vision 2020, Joint Vision 2010, "Copernicus...C4ISR for the 21st Century," "Forward...From the Sea", C4I for the Warrior and are guided by CINC requirements. As operational requirements change, either through changes in mission, technological change, technical insertion into systems, or through systems integration efforts, these changes must be reflected in all applicable requirements documents. Additionally, support to related C4ISR projects as they define and maintain Theater and Battleforce C4ISR architectures must be maintained. Also, integrate future Naval C4ISR capabilities within migration plans and roadmaps linked to operational requirements documentation. Finally, assist OPNAV in REQ/BAM support for the development of warfighter C4ISR requirements. These requirements are defined by both OPNAV and the Fleet. The products include the support for requisite Baseline Assessment Memoranda, Copernicus Requirements Working Group statements of Fleet requirements, the generation of a SMIDB or like requirements functional traceability matrix from the Fleet based on requirements documents (ORDs, MNS, etc.) and IWARS inputs.

- (U) (\$1,398) Establish data and information architectures to be utilized in development of network architectures for Navy Marine Corp Intranet (NMCI). Effort to include development of NMCI Global Directory services, NMCI Global Knowledge Portal and data integration toolset for Navy IT. Design activities include tactical shore systems, relationships of C4ISR systems to NMCI, and pier-side design and integration across the shore sites and the Fleet.
- (U) (\$1,129) Continue development of the web-based collaborative grid approach where programs/projects are synchronized across the claimancy/acquisition community into Global Information Grid (GIG). The shift for the afloat part of the Navy, from platform-centric warfare to network-centric warfare, and the Naval Intranet for the land-based portion of the Navy, demands that new approaches are identified, matured, and tested with the warfighters and systems developers. The product will be a validated and modeled methodology, based on web technology, whereby a matrix of capabilities are mapped to organizations and products, leading to prioritized and scoped C4ISR work elements for claimancy pursuits. This web site will contain the results of technology insertion experiments and "lessons learned" from those trials, so that successes can be applied to similar systems enhancement attempts. Included will be software reuse experiments, hardware applications, and networking trials.

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BUDGET ACTIVITY: 4

PROGRAM ELEMENT: 0604707N

PROJECT NUMBER: X2144

PROGRAM ELEMENT TITLE: SEW Architecture/Eng

PROJECT TITLE: SEW ENGINEERING

B. (U) OTHER PROGRAM FUNDING SUMMARY: Not applicable.

C. (U) ACQUISITION STRATEGY: Not applicable.

D. (U) SCHEDULE PROFILE: Not applicable.

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FY 2002 RDT&E,N Program Element/Project Cost Breakdown

DATE: JUNE 2001

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PROGRAM ELEMENT: 0604707N

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Exhibit R-3 Cost Analysis (page 1)										Date		
APPROPRIATION/BUDGET ACTIVITY 4			RDT&E,N		PROGRAM ELEMENT 0604707N					PROJECT NAME AND NUMBER SEW Engineering X2144		
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY-01 Cost	FY-01 Award Date	FY-02 Cost	FY-02 Award Date			Cost To Complete	Total Cost	Target Value of Contract
Subtotal Product Development												
Remarks:												
SEW/C4I Technology Integration	Various	Various	4554							0	4554	4554
Systems A&E and Validation	Various	Various	12985							0	12985	12985
C4ISR/C4ISR-T Systems Design/Capabilities*	Various	Various	5091	2941	TBD	4111	TBD			Cont.	Cont.	Cont.
C4ISR Operational Requirements	Various	Various	2773	1656	TBD	525	TBD			Cont.	Cont.	Cont.
AC2WG	Various	Various		776	TBD	395	TBD			Cont.	Cont.	Cont.
Project R230				36								
NMCI Reimbursable funding	Various	Various				772					Cont.	Cont.
Information Repository/Naval Architecture Database	Various	Various	4544							0	4544	4544

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PROGRAM ELEMENT TITLE: SEW Architecture/Eng

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Subtotal Support	Various	Various	29947	5409		5803				Cont.	Cont.	Cont.
Remarks:												

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PE/Project Cost Breakdown
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PROGRAM ELEMENT: 0604707N

PROJECT NUMBER: X2144

PROGRAM ELEMENT TITLE: SEW Architecture/Eng

PROJECT TITLE: SEW ENGINEERING

Exhibit R-3 Cost Analysis (page 2)									Date			
APPROPRIATION/BUDGET ACTIVITY RDT&E,N 4				PROGRAM ELEMENT 0604707N					PROJECT NAME AND NUMBER SEW Engineering X2144			
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY-01 Cost	FY-01 Award Date	FY-02 Cost	FY-02 Award Date			Cost To Complete	Total Cost	Target Value of Contract
SEW Engr/JWID	Various	Various	7522	2670	TBD	2666	TBD			Cont.	Cont.	Cont.
Subtotal T&E	Various	Various	7522	2670	TBD	2666	TBD			Cont.	Cont.	Cont.
Remarks												
Subtotal Management												
Total Cost			37469	12043		8469				Cont.	Cont.	Cont.

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PE/Project Cost Breakdown
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PROGRAM ELEMENT: 0604707N

PROJECT NUMBER: X2144

PROGRAM ELEMENT TITLE: SEW Architecture/Eng

PROJECT TITLE: SEW ENGINEERING

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PROGRAM ELEMENT: 0604707N

PROGRAM ELEMENT TITLE: SEW Architecture/Eng

(U) COST: (Dollars in Thousands)

PROJECT NUMBER	FY 2000	FY 2001	FY 2002
TITLE	ACTUAL	ESTIMATE	ESTIMATE
R2357 Maritime Battle Center	22,295	23,618	21,678

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The mission of the Maritime Battle Center (MBC) is to execute the Naval Warfare Innovation Process. The process takes concepts developed by the Strategic Studies Group and approved by the Chief of Naval Operations into Fleet Battle Experiments; conducts preliminary sub-scale experiments and technological demonstrations focused on the advanced engineering and operational system development of systems related to all conflict levels of Littoral Battlespace. The MBC environment is a network centric environment that links the existing "core" Naval facilities to the Marine Corps Warfighting Lab (MCWL), the Joint Battle Center/Federated Battle Lab, and technologists in industry and academia. The MBC is essential to the evolution of combat capabilities since it is the engine for validating the new network centric warfare techniques in conjunction with the Sea Based Battle Laboratories (SBBL), Science & Technology (S&T) initiatives and other initiatives that originate with the operating forces. The MBC supports the early and sustained involvement of Joint Warfighters in refining the technology to meet the tactics, techniques, and procedures needed for 2010-2020 Littoral Battlespace. The MBC will have multiple roles since it is a crosscutting organization involved in several facets of concept, platform, weapons, weapon systems and Information Technologies (IT), Information System (IS) and Information Management (IM) systems development and integration. These include collaborative planning, operational experimentation planning and execution, technology transition/acquisition support, systems engineering, and integration, technology assimilation and operational demonstrations.

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BUDGET ACTIVITY: 4

PROGRAM ELEMENT: 0604707N

PROJECT NUMBER: R2357

PROGRAM ELEMENT TITLE: SEW Architecture/Eng

PROJECT TITLE: MARITIME BATTLE
CENTER

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 2000 ACCOMPLISHMENTS

- (U) (\$4,400) Fleet Battle Experiment (FBE) Analysis and Core Support: The management and administration of MBC activities included oversight of the experimental planning phase, the execution and collection phases, the analysis phase, and the output decision phase. This entailed the integration of many preliminary experiments and technology demonstrations coupled with the inputs of experienced military leaders, current warfighting CINCs, and technologists from industry and academia.
- (U) (\$3,600) Enabling Technical Development: Prior to transitioning any technology to Fleet Commanders during a FBE or Limited Objective Experiment (LOE), technology needs preliminary engineering experimentation to determine its compatibility and compliance with the Global Command and Control System (GCCS) architectures, IT 21 architectures, and the identification of high performance and interoperability issues. The objectives of these preliminary experiments was to bring information superiority to Fleet operations while achieving a level of critical mass in the early identification of technologies with "production" potential. These technologies included commercially developed technologies in collaborative planning, interactive sharing, the correlation of decision data-reducing "decision time, and the exploration of dynamically managed circuits operating in sea, ground, and/or aerospace domains.
- (U) (\$13,429) FBE Direct Experimentation: The Numbered Fleet Commanders are designated experimentation leads for FBES and LOEs. The Fleet Commander in the Area of Responsibility where the experiment is held will lead the FBE series and designate their flagship as Sea Based Battle Laboratories (SBBL) that will work with the MBC Director in the conduct of the FBE. This enables the Fleet to directly participate in the development of future Navy concepts and capabilities and provides the Fleet an opportunity to provide immediate feedback to the technologist and concept developer.
- (U) (\$1,376) Technical Evaluation: MBC planned and participated in the planning of other services and joint

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PROGRAM ELEMENT: 0604707N

PROJECT NUMBER: R2357

PROGRAM ELEMENT TITLE: SEW Architecture/Eng

PROJECT TITLE: MARITIME BATTLE
CENTER

commands of exercises and tests that involved the Navy experimentation process. Its core competency was fleet operations, exercise designs, costing, equipping and exercise analysis, and overall evaluations with recommendations for future related activities. The technical operations also evaluated the results of Advanced Concept Technology Demonstrations (ACTDs), Joint Warrior Interoperability Demonstration (JWIDs), and Joint Battle Center (JBC) activities and determined the most expeditious paths to transition such concepts into actual and sustainable Naval warfighting capability. As promising innovative technologies emerged from the commercial sector, the technical operations element devised insertion strategies for prototypes. Using existing resources, the components needed to provide the required set of capabilities were generated and brought into operation for testing and analysis purposes. Navy laboratory support from all claimancies were tasked dependent on the requirements. Knowledge of laboratory capabilities and projected needs of such laboratories are inherent in this support. Joint exercise support supplied by maritime forces were coordinated using this organizational function.

2. (U) FY 2001 PLAN:

- (U) (\$4,788) FBE Analysis and Core Support: The management and administration of MBC activities includes oversight of the experimental planning phase, the execution and collection phases, the analysis phase, and the output decision phase. This entails the integration of many preliminary experiments and technology demonstrations coupled with the inputs of experienced military leaders, current warfighting CINCs, and technologists from industry and academia.
- (U) (\$3,187) Enabling Technical Development: Prior to any technology transition to the Numbered Fleet Commanders during a Fleet Battle Experiment (FBE) or Limited Objective Experiment (LOE). The technology needs preliminary engineering experimentation to determine its compatibility and compliance with the Global Command and Control System (GCCS) architectures, IT 21 architectures, and the identification of high performance and interoperability issues. The objectives of these preliminary experiments is to bring information superiority to Fleet operations while achieving a level of critical mass in the early identification of technologies with "production" potential. These technologies include commercially developed technologies in collaborative planning, interactive sharing, the correlation of decision data-reducing "decision time, and the exploration of dynamically managed circuits operating in sea, ground,

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PROJECT TITLE: MARITIME BATTLE
CENTER

and/or aerospace domains.

- (U) (\$14,341) FBE Direct Experimentation: The Numbered Fleet Commanders are designated experimentation leads for FBEs and LOEs. The Fleet Commander in the AOR where the experiment is held will lead the FBE series and designate their flagship as Sea Based Battle Laboratories (SBBL) that will work with the MBC Director in the conduct of the FBE. This enables the Fleet to directly participate in the development of future Navy concepts and capabilities and provides the Fleet an opportunity to provide immediate feedback to the technologist and concept developer.
- (U) (\$1,302) Technical Evaluation: MBC will plan and participate in planning by other services and joint commands of exercises and tests that involve the Navy experimentation process. Its core competency will be fleet operations, exercise designs, costing, equipping and exercise analysis and overall evaluations with recommendations for future related activities. The technical operations will also evaluate the results of Advanced Concept Technology Demonstrations (ACTDs), Joint Warrior Interoperability Demonstration (JWIDs), and Joint Battle Center (JBC) activities and determine the most expeditious paths to transition such concepts into actual and sustainable Naval warfighting capability. As promising innovative technologies emerge from the commercial section, the technical operations element will devise insertion strategies for prototypes. Using existing resources, the components needed to provide the required set of capabilities will be generated and brought into operation for testing and analysis purposes. Navy laboratory support from all claimancies will be tasked dependent on the requirements. Knowledge of laboratory capabilities and projected needs of such laboratories will be inherent in this support. Joint exercise support supplied by maritime forces will also be coordinated using this organizational function.
- (U) (\$206) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.

3. (U) FY 2002 PLAN:

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PROJECT TITLE: MARITIME BATTLE
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- (U) (\$4,283) FBE Analysis and Core Support: The management and administration of MBC activities includes oversight of the experimental planning phase, the execution and collection phases, the analysis phase, and the output decision phase. This entails the integration of many preliminary experiments and technology demonstrations coupled with the inputs of experienced military leaders, current warfighting CINCs, and technologists from industry and academia.
- (U) (\$2,598) Enabling Technical Development: Prior to any technology transition to the Numbered Fleet Commanders during a Fleet Battle Experiment (FBE) or Limited Objective Experiment (LOE). The technology needs preliminary engineering experimentation to determine its compatibility and compliance with the Global Command and Control System (GCCS) architectures, IT 21 architectures, and the identification of high performance and interoperability issues. The objectives of these preliminary experiments is to bring information superiority to Fleet operations while achieving a level of critical mass in the early identification of technologies with "production" potential. These technologies include commercially developed technologies in collaborative planning, interactive sharing, the correlation of decision data-reducing "decision time, and the exploration of dynamically managed circuits operating in sea, ground, and/or aerospace domains.
- (U) (\$13,887) FBE Direct Experimentation: The Numbered Fleet Commanders are designated experimentation leads for FBEs and LOEs. The Fleet Commander in the AOR where the experiment is held will lead the F|BE series and designate their flagship as Sea Based Battle Laboratories (SBBL) that will work with the MBC Director in the conduct of the FBE. This enables the Fleet to directly participate in the development of future Navy concepts and capabilities and provides the Fleet an opportunity to provide immediate feedback to the technologist and concept developer.
- (U) (\$910) Technical Evaluation: MBC will plan and participate in planning by other services and joint commands of exercises and tests that involve the Navy experimentation process. Its core competency will be fleet operations, exercise designs, costing, equipping and exercise analysis and overall evaluations with recommendations for future related activities. The technical operations will also evaluate the results of

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Advanced Concept Technology Demonstrations (ACTDs), Joint Warrior Interoperability Demonstration (JWIDs), and Joint Battle Center (JBC) activities and determine the most expeditious paths to transition such concepts into actual and sustainable Naval warfighting capability. As promising innovative technologies emerge from the commercial section, the technical operations element will devise insertion strategies for prototypes. Using existing resources, the components needed to provide the required set of capabilities will be generated and brought into operation for testing and analysis purposes. Navy laboratory support from all claimancies will be tasked dependent on the requirements. Knowledge of laboratory capabilities and projected needs of such laboratories will be inherent in this support. Joint exercise support supplied by maritime forces will also be coordinated using this organizational function.

B. (U) OTHER PROGRAM FUNDING SUMMARY: Not applicable.

C. (U) ACQUISITION STRATEGY: Not applicable.

D. (U) SCHEDULE PROFILE: Not applicable.

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FY 2002 RDT&E,N Program Element/Project Cost Breakdown

DATE: JUNE 2001

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PROJECT NUMBER: R2357

PROGRAM ELEMENT TITLE: SEW Architecture/Eng

PROJECT TITLE: MARITIME BATTLE
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Exhibit R-3 Cost Analysis (page 1)								Date				
APPROPRIATION/BUDGET ACTIVITY RDT&E,N			PROGRAM ELEMENT 0604707N					PROJECT NAME AND NUMBER Maritime Battle Center R2357				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY-01 Cost	FY-01 Award Date	FY-02 Cost	FY-02 Award Date			Cost To Comple te	Total Cost	Target Value of Contract
System Test and Evaluation	Various	Various	30454	18830	Various	17395	Various			CONT	CONT	CONT
Subtotal T&E			30454	18830		17395				CONT	CONT	CONT
Remarks												
Program Management	Various	Various	5941	4788	Various	4283	Various			CONT	CONT	CONT
Subtotal Management			5941	4788		4283				CONT	CONT	CONT
Remarks												
Total Cost			36395	23618		21678				CONT	CONT	CONT

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DATE: JUNE 2001

BUDGET ACTIVITY: 4

PROGRAM ELEMENT: 0604707N

PROJECT NUMBER: R2357

PROGRAM ELEMENT TITLE: SEW Architecture/Eng

PROJECT TITLE: MARITIME BATTLE
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FY 2002 RDT&E,N Program Element/Project Cost Breakdown

DATE: JUNE 2001

BUDGET ACTIVITY: 4

PROGRAM ELEMENT: 0604707N

PROJECT NUMBER: R2357

PROGRAM ELEMENT TITLE: SEW Architecture/Eng

PROJECT TITLE: MARITIME BATTLE
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Exhibit R-3 Cost Analysis (page 2)										Date		
APPROPRIATION/BUDGET ACTIVITY RDT&E,N				PROGRAM ELEMENT 0604707N						PROJECT NAME AND NUMBER Maritime Battle Center R2357		
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY-01 Cost	FY-01 Award Date	FY-02 Cost	FY-02 Award Date			Cost To Complete	Total Cost	Target Value of Contract
Subtotal Product Development												
Remarks:												
Subtotal Support												

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PE/Project Cost Breakdown
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FY 2002 RDT&E,N Program Element/Project Cost Breakdown

DATE: JUNE 2001

BUDGET ACTIVITY: 4

PROGRAM ELEMENT: 0604707N

PROJECT NUMBER: R2357

PROGRAM ELEMENT TITLE: SEW Architecture/Eng

PROJECT TITLE: MARITIME BATTLE
CENTER

Remarks

R-1 Line Item No 92

PE/Project Cost Breakdown
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